

### **AMENDMENTS TO THE CLAIMS**

*The listing of claims will replace all prior versions and listings of claims in the application:*

#### **Listing of Claims:**

**1. – 12. (Canceled)**

**13. (Currently Amended)** A method of producing a device comprising the steps of:

- (a) forming at least one optoelectronic structure, where formation of the at least one optoelectronic structure comprises depositing an epitaxial layer on a substrate;
- (b) forming a through wafer via extending from a top surface to a bottom surface of said device; and
- (c) forming an isolation moat in said device using both etching and ion implantation processes, wherein said isolation moat is disposed about said through wafer via and said at least one optoelectronic structure, and said isolation moat extends into the epitaxial layer.

**14. (Previously Presented)** The method of claim 13, wherein said at least one optoelectronic structure is a vertical cavity surface emitting laser.

**15. (Original)** The method of claim 13, additionally comprising the step of forming at least two anodes, positioned on said top and bottom surfaces of said device.

**16. (Original)** The method of claim 15, additionally comprising the step of electrically connecting said two anodes through the through wafer via.

**17. (Original)** The method of claim 16, wherein the step of electrically connecting said two anodes through the through wafer via comprises coating the inner walls of said through wafer via with an electrically conductive material.

18. **(Original)** The method of claim 17, wherein the conductive material is a conductive metal.

19. **(Original)** The method of claim 18, wherein the conductive metal is gold.

20. **(Original)** The method of claim 13, wherein said through wafer via is formed with Reactive Ion Etching (RIE).

21. **(Cancelled).**

22. **(Original)** The method of claim 13, additionally comprising the step of implanting ions in said device into a region beneath the isolation moat.

23. **(Original)** The method of claim 22, wherein said ion implantation implants hydrogen ions.

24. **(Previously Presented)** The method of claim 13, further comprising defining an oxidation trench in the device, the oxidation trench extending into the epitaxial layer.

25. **(Cancelled).**

26. **(Previously Presented)** The method of claim 13, wherein forming at least one optoelectronic structure comprises forming both a laser and a photodetector.

27. **(Previously Presented)** The method of claim 13, wherein forming at least one optoelectronic structure comprises forming a stack that includes both a laser and a photodetector.

28. **(Previously Presented)** The method of claim 13, further comprising forming at least two cathodes, one of which is positioned on said top surface of said device and one of which is formed on said bottom surface of said device.

29. **(Previously Presented)** The method of claim 28, further comprising electrically connecting said two cathodes through the through wafer via.

30. **(New)** A method of producing a device comprising the steps of:  
(a) forming at least one optoelectronic structure, where formation of the at least one optoelectronic structure comprises depositing an epitaxial layer on a substrate;  
(b) forming a through wafer via extending from a top surface to a bottom surface of said device; and  
(c) forming an isolation moat in said device using an etching process, wherein said isolation moat is disposed about said through wafer via and said at least one optoelectronic structure, and said isolation moat extends into the epitaxial layer.

31. **(New)** The method of claim 30, wherein the etching process is Reactive Ion Etching.

32. **(New)** The method of claim 30, additionally comprising the step of forming at least two anodes, positioned on said top and bottom surfaces of said device and electrically connecting said two anodes through the through wafer via by coating the inner walls of said through wafer via with an electrically conductive material.

33. **(New)** The method of claim 30, additionally comprising the step of implanting ions in said device into a region beneath the isolation moat.

34. **(New)** The method of claim 30, further comprising forming at least two cathodes, one of which is positioned on said top surface of said device and one of which is

formed on said bottom surface of said device and electrically connecting said two cathodes through the through wafer via.